

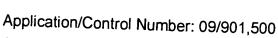
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO	
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J.C. PATENTS INC.			EXAMINER		
Suite 250 4 Venture			KILKENNY, TODD J		
Irvine, CA 926	518				
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			1733		
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary Application No. Og/901,500	N
Examin r Todd J Kilkenny ART Unix Todd J Kilkenny ASHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed The MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available to incommunication. If the Discount of the provision to a 37 CFR 1.136(a). In no event, however, may a reply be timely filed The Discount of the provision to the communication of the provision to the provision to the communication of the provision to the communication of the provision to the communication of the provision to the provision to the communication of the provision of t	//
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Notice of Draftsperson's Patent Drawing Review (PTO-948) Information Disclosure Statement(s) (PTO-1449) Paper No(s) Other	
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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species A1 in Paper No. 6 is acknowledged. The traversal appears to be on the ground(s) that only a single embodiment is disclosed and that all claims are generic to this single embodiment. This is not found persuasive because applicant has clearly defined three separate embodiments in his disclosure; a first preferred embodiment wherein the isolating material is applied by a rolling method (Figure 2); a second preferred embodiment discloses applying the isolating material by a spraying method (Figure 3); and a third preferred embodiment wherein the isolating material is applied by a screen printing method (Figure 4).

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 11, 12, 23 and 24 (newly numbered 10, 11, 22 and 23) are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

Drawings

3. It appears that Figures 1a and 1b should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.



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Claim Objections

4. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). It appears applicant inadvertently misnumbered the original claims, skipping claim # 9.

Misnumbered claims 10 - 24 have been renumbered 9 - 23 respectively. In the following objection and rejections, the claims are addressed in accordance with their renumbering.

5. Claim 13 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 12. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

- 6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 7. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.



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8. Claim 20 recites the limitation "the adhesive layers" in line 1. There is insufficient antecedent basis for this limitation in the claim as independent claim 13, of which 20 depends from, fails to define adhesive layers.

Claim Rejections - 35 USC § 102

- 9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
- 10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 11. Claims 1 5, 7 and 12 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al (US 4,400,438).

Takahashi et al disclose a process for producing a fire retardant and heat resistant copper-clad laminated board including the steps of impregnating a base material (e.g. glass fabric) with a varnish compound comprising at least one maleimide resin (taken as applicant's "isolating material"), drying the impregnated base material to prepare a prepreg, and contact bonding under heat and pressure two sheets of copper foil sandwiching the base material ("laminating metal foils on the upper surface and lower surface of the substrate") (Col. 1, line 63 – Col. 2, line 37). Takahashi et al further disclose impregnating by dipping the glass fabric (Col. 8, lines 53 – 66), wherein dipping



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is taken to read on applicant's claim of "coating" as recited in independent claims 1 and 13 and furthermore wherein dipping to impregnate the base material with said varnish is taken to anticipate forming a layer of the varnish ("isolating layer") on both the upper and lower surfaces of said base material.

As to claims 2-5 and 14-17, the varnish of Takahashi et al includes at least one maleimide resin and can also include an epoxy resin (Col. 5, lines 9-68).

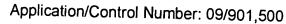
Claim Rejections - 35 USC § 103

- 12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 13. Claims 1-7, 9, 12-18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al (US 4,400,438) in view of Watanabe et al (US 3,936,575).

In the event that Takahashi et al's teaching to dip the substrate in resin to impregnate does not anticipate "coating", a second rejection in view of Watanabe et al is provided to render obvious roll coating to impregnate the glass fabric substrate in a copper-clad laminate.

Watanabe et al disclose a method for manufacturing a metal-clad laminate as a baseboard for a flexible printed circuit, consisting of a metal foil and base sheet



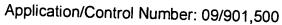


composed of a fibrous base material impregnated with a resin composition. The method comprises a roll-laminating process in which an insulating fibrous base material in web form is impregnated with a resin composition by roll-coating, evaporating the solvent in the resin composition in a drying zone to form a B-stage resin composition and then sending the thus treated base material to a press-roll zone where a metal foil is pressed with heating to form the metal clad laminate (Col. 10, line 54 – Col. 11, line 3, Col. 13, lines 9 - 46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the roll-laminating process of Watanabe et al to the teaching of Takahashi et al as the roll-laminating process as suggested by Watanabe et al is a continuous process that simplifies the course of manufacture and increases the production speed to obtain an economical advantage (Watanabe et al, Col. 2, line 49 – Col. 3, line 14).

As to claims 6 and 20, in the roll laminating process of the secondary reference, Watanabe et al are concerned with equipment rolls that impregnate the fibrous base material with the resin in such a manner as to manifest its adhesive strength to the metal foil and to ensure that the resin may acquire sufficient flow to give the laminate good appearance, including the roll material (i.e. rubber roll against and a steel roll) and the roll position, both of which are equipment parameters (Col. 11, lines 4 - 34).

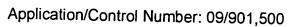




14. Claims 1 - 4, 6, 7, 9, 12 - 16 and 18 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 3,936,575) in view of Takahashi et al (US 4,400,438).

Watanabe discloses a method for manufacturing a metal-clad laminate as a baseboard for a flexible printed circuit, consisting of a metal foil and base sheet composed of a fibrous base material impregnated with a resin composition comprising a polyepoxy compound. The method comprises a roll-laminating process in which an insulating fibrous base material in web form is impregnated with the polyepoxy comprising resin (applicant's "isolating material") composition by roll-coating, evaporating the solvent in the resin composition in a drying zone to form a B-stage resin composition the then sending the thus treated base material to a press-roll zone where a metal foil is pressed with heating to form the metal clad laminate (Col. 10, line 54 – Col. 11, line 3, Col. 13, lines 9 - 46). However, it appears Watanabe et al fail to disclose laminating copper foil onto both the upper surface and lower surface of the impregnated substrate.

As evidenced by Takahashi et al, metal-clad laminates are known in the printed circuit board art to be formed with metal foils laminated to both sides of an impregnated glass fabric substrate. It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to carry out the metal foil lamination process of Watanabe et al to both an upper surface and lower surface of the impregnated substrate so as to form copper foil sandwiched substrates as are known in the art in producing circuit boards as evidenced by Takahashi et al.



As to claims 2 and 14, Watanabe et al teach epoxy resin impregnated glass cloth as the substrate (Col. 9, lines 33 - 52).

As to claims 3, 4, 15 and 16, the resin composition of Watanabe et al includes epoxy resins.

As to claims 6 and 20, Watanabe et al are concerned with equipment rolls that impregnate the fibrous base material with the resin in such a manner as to manifest its adhesive strength to the metal foil and to ensure that the resin may acquire sufficient flow to give the laminate good appearance, including roll material (i.e. rubber roll against and a steel roll) and roll position, both of which are equipment parameters (Col. 11, lines 4-34).

As to claim 7 and 18, Watanabe et al teach that the metals foils can be conductive foils of copper.

15. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al and/or Watanabe et al (US 3,936,575) in view of Yates et al (US 6,270,648).

Both Takahashi et al and Watanabe et al disclose copper as the metal foil and Watanabe et al further disclose that the surface of a metal foil to be bonded may be subjected to a mechanical treatment or to a chemical treatment (Col. 9, lines 53 – 63), but neither reference fails to positively recite high profile, low profile or reverse copper foil. In US 6,270,648, Yates et al is evidence that different treatments are known to produce high profile, low profile or reverse copper foils to increase the adhesion





strength of the foil to the base substrate in forming metal clad laminates. It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to employ treated copper foil with increased adhesion strength as the copper foil of Takahashi et al and/or Watanabe et al, wherein such treatments are known in the art to produce low profile, high profile or reverse copper foils as evidenced by the secondary reference to Yates et al (Col. 4, line 37 – Col. 4, line15).

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Todd J. Kilkenny** whose telephone number is **(703) 305-6386**. The examiner can normally be reached on Mon - Fri (9 - 5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

TJK June 9, 2003

TIK

SAM CHUAN YAO PRIMARY EXAMINER